

TIF-31735

Patent Amendment

*A1
cont'd*

from moving the datapath cells in later operations. Constraints for the remaining cells are then installed in the place and route tool, and criteria-driven placement, such as timing-driven placement, can be used to arrange these cells in an optimum fashion. The remaining cells can be placed in open areas of the datapath structure for improved density.

In the claims:

Please substitute each of the following claims for the pending claim of the same number:

Sub B7

A2

1 (Amended). A method of controlling layout of cells in an integrated circuit including datapath cells in a structured layout and other cells in an unstructured layout, comprising the steps of:

generating a description of a desired layout for the datapath cells;
transferring said description to a place and route tool to assign the desired layout to the datapath cells within the place and route tool;

assigning a fixed status to the datapath cells to prevent movement of the cells;
transferring desired criteria regarding the other cells to the place and route tool;
and
optimizing the layout based on said desired criteria, such that the datapaths cells are unmoved as different layout iterations are performed on the other cells.

5 (Amended). The method of claim 3 wherein said step of generating one or more matrices comprises the step of generating matrices having two or more matrices with interleaved columns.

6 (Amended). The method of claim 3 wherein said step of generating matrices comprises the step of generating matrices leaving free space between slots for datapath cells in which ones of said other cells are placed.

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8 (Amended). An apparatus for controlling layout of cells in an integrated circuit including datapath cells in a structured layout and other cells in an unstructured layout, comprising:

a place and route tool;
a datapath generator for generating a description of a desired layout for the datapath cells and transferring said description to a place and route tool to assign the desired layout to the datapath cells within the place and route tool;
wherein a fixed status can be assigned to the datapath cells in said place and route tool to prevent movement of the cells during optimization of the layout of said other cells.

9 (Amended). The apparatus of claim 8 wherein said place and route tool receives information on said datapath and other cells.

A5
13 (Amended). The apparatus of claim 10 wherein said datapath generator generates a description of a plurality of matrices for datapath cells leaving free space between slots of said matrices in which ones of said other cells are placed.